prepASH 129

Service manual

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1 Introduction

1.1 General information about the service manual

1. This service manual is valid for the drying and ashing system prepASH 129
2. The manufacture exclude liability for damages which result from
   – inadequate maintenance,
   – nonconforming location,
   – wrong or non competent installation of the instrument,
   – modification without authority or neglecting recommendations,
   – using accessories/spare parts other when recommended or delivered by manufacture.
3. This service manual contains fundamental instructions to be followed before doing any service or reparation step. This service manual, has to be read and understood by everybody doing any of the following work.

2 Safety instructions

2.1 Generatl safety instructions

- **Environmental conditions**
- Temperature: 5 °C – 35 °C
- Relative humidity: 25 % -85 %, non condensing, not corrosiv
- **Location and ventilation**
- Only set prepASH up in a room which is adequately spacious, dry and well ventilated.
- Only operate the device upright on its stand and on a stable, level base.
- Observe the following safe distances from neighbouring devices, equipment and walls: space of at least 15 cm around the sides and at least 1.5 m from the ceiling
- The exhaust gas hose must be fed into an exhaust system.
- **Power cord and power supply**
- Never touch any parts under voltage! This may lead to an electric shock, which may lead to serious injury or even death.
- The instrument may only be operated using the original power cord supplied (with a protective earth conductor).
- Never run the instrument with a damaged power cord.
- Voltage and frequency must be in accordance to the type label.
- **Safety-conscious work**
- Follow all safety instructions in the manual, all rules for accident prevention and all rules of technique.
- Follow the local safety rules.
- Fundamental rules of work with chemicals have to be followed. (e.g. safety glasses, protective gloves etc.)
- **Exhaust gases**
- The exhaust gas hose must be fed into an exhaust system.

- **Maintenance and Service**

- Disconnect the ashing device from the mains during all maintenance work (pull out the plug) and ensure that the device cannot be switched on inadvertently. (Adjustment work under voltage must only be done by a specialist who is aware of that danger)
- prepASH has to be cooled down before maintenance work

- **Fuse**
- Under no circumstances should you use other fuses or attempt to brige the fuse:

- Automatic circuit breaker:	- To be operated from the back
- Power board:	- 2 x 4 A Mittelträge

- **cleaning**
- The housing can be cleaned on the outside with a damp cloth.
- Clean the sample chamber with a vacuum cleaner after taking out the parts inside (sample plate, crucible, balance pan). Take care of the sensitive insulating and heating radiators. Avoid damage with the suction tube.

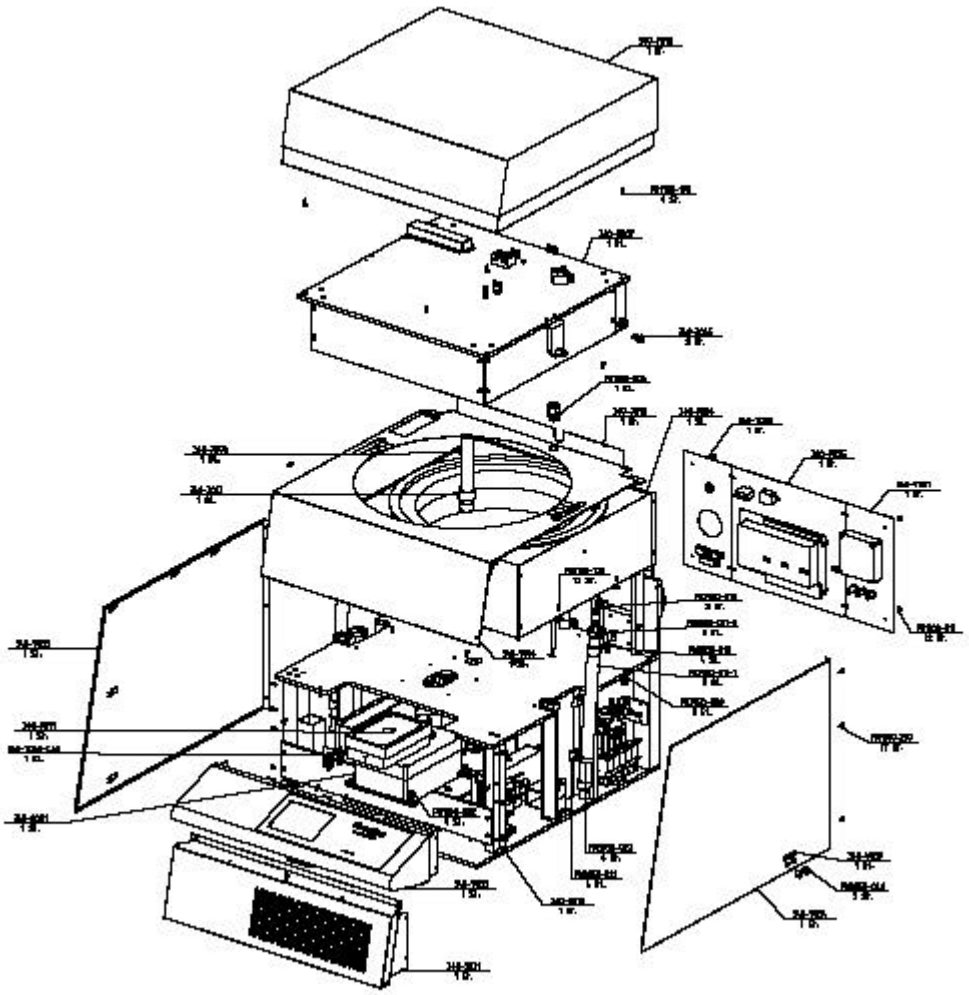
2.2 Symbols

Danger: voltage

Caution: hot surface

Tips and important rules

3 Instrument overview



The oven can be heated up to 1000 °C
prepASH has to be cooled down before doing any step of service or repairs

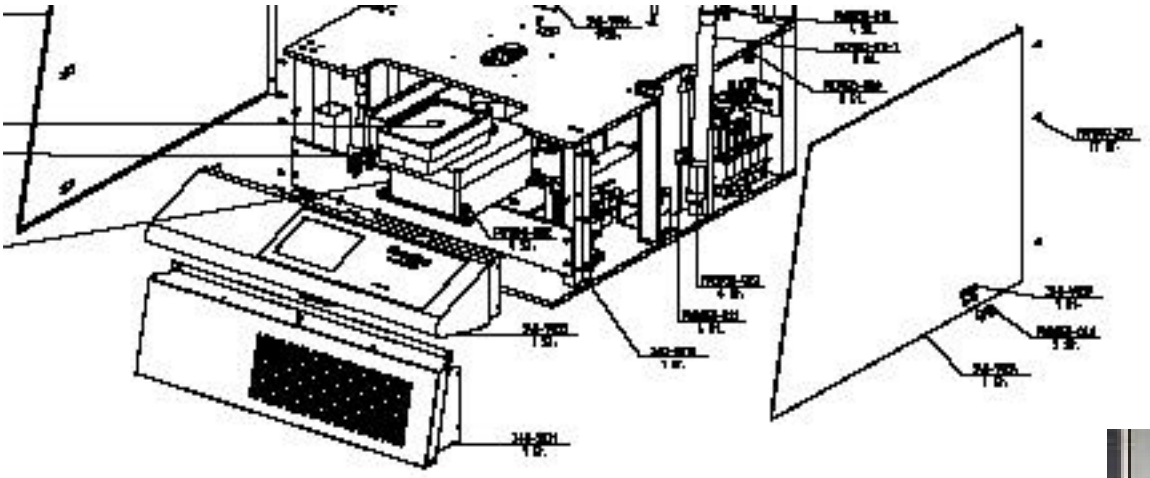
Danger: Disconnect the ashing device from the mains during all maintenance work (pull out the plug) and ensure that the device cannot be switched on inadvertently.

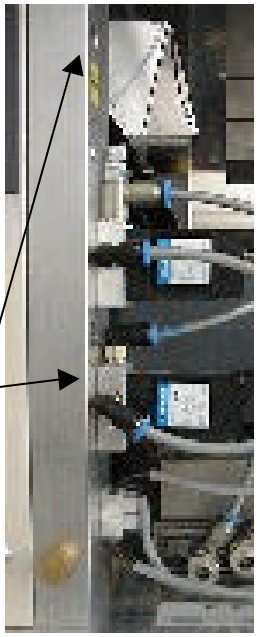
4 Tool kit/material

Allen key 3 mm, 5 mm
Socket wrench No 7
Phillips screwdriver
Slotted screwdriver No 0, No 5 short!
Line head
Flat wrench No 7, No 12, No 13, No 17
Brush (290-7037)

Lubricant (PN3950-097): Universal High Performance Molykote® BR 2 PLUS

5 Open prepASH





1. **Important:** Disconnect the prepASH from the mains (pull off mains plug)
2. side walls:
   remove the 2 valve cover on the right hand site (340-6400/34)
   remove the 3 screws on each side wall
   pull the side wall around 1 cm from the device and pull it to the back
3. remove the 2 screws from the support on the front right hand site and swing the front panel out to the left

6 Maintenance

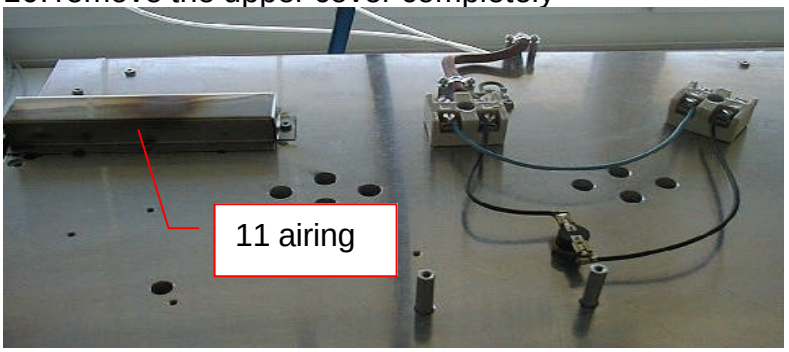
The following steps have to be done on every service:

- open the instrument
- vacuum
- drive unit:
  - lubricate the recirculating ball screws
  - lubricate the linear guidings
- clean the airing (340-2004)
- control the filter mat
  - if needed clean or replace it

6.1 Clean airing

Remove upper cover

1. open and fix the hood with the hood locking device
2. remove sample plate and weighing pan and fix the red balance protection plug
3. **Important:** disconnect the prepASH from the mains
4. open the middle back
5. take out the plug of the crush protection on the power board (Pos7/8) unscrew the cables from the plug and remove cable ties
6. unscrew the 4 screws in the corners of the cover from below
7. remove the hood locking device and close the hood manually
8. lift the upper cover and push it to the front (caution cable isolation)
9. pull up the crush protection cables
10. remove the upper cover completely

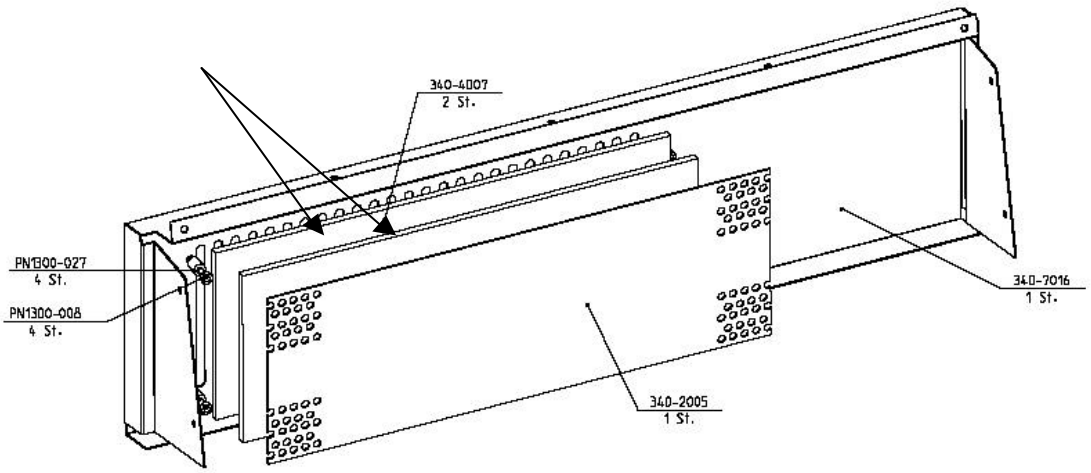


11. unscrew the airing
12. clean the airing mechanically and with water
13. wipe with alcohol
14. fix the airing

Assemble upper cover and crush protection

1. put the upper cover on the hotplate (displaced slightly to the front, **caution: cable isolation**)
2. pull the crush protection cables through the tubular cable protection (e.g. with aid of a wire from below)
3. put the upper cover to the correct position
4. plug in the mains cable and turn on the instrument
5. open (by software) and fix the hood
6. turn off prepASH and disconnect from the mains
7. fix the upper cover with 4 screws in the corners from below
8. screw the cables of the crush protection on the plug, and plug it in to the power board (Pos 7/8)
9. put the cable ties
10. close the back board
11. remove the balance protection plug and slide in the weighing pan
12. remove the hood locking device
13. plug in the mains cable and turn on the instrument
14. check the crush protection
15. close the side walls

6.2 Filter mat: cleaning/replacing

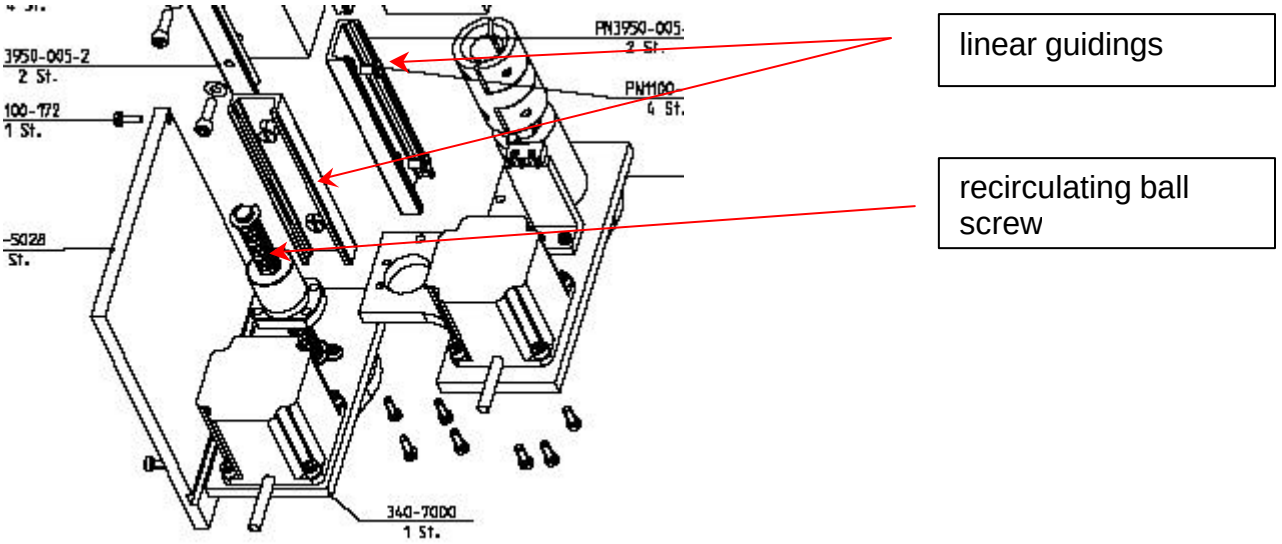


1. **Important:** disconnect the prepASH from the mains (Pull out mains plug)
1. open prepASH (side walls and front panel)
2. Loosen perforated plate remove the 2 screws on the top, loosen the 2 lower screws
3. remove the mat
4. clean or replace the map
5. put the mat from the top under the perforated plate
6. close the device

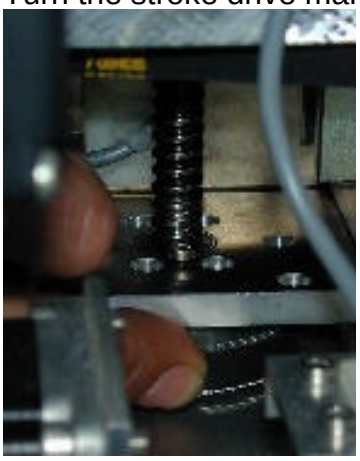
6.3 Lubricate recirculating ball screws and linear guidings

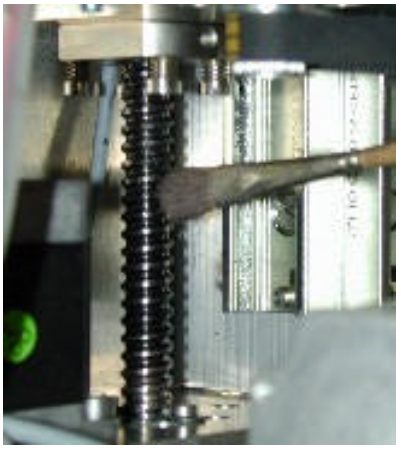
1. **Important:** disconnect the prepASH from the mains (Pull out mains plug)
2. open prepASH (side walls and middle back)

Stroke



3. Turn the stroke drive manually right to the top (cogwheel resp. driven belt)

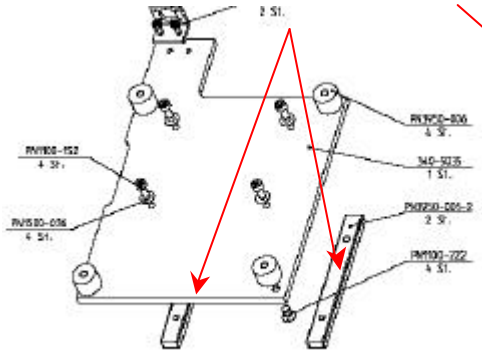


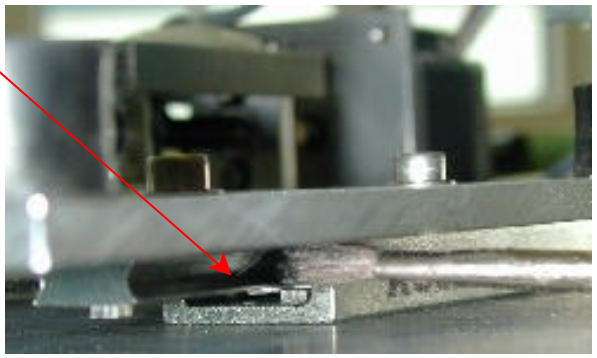


4. lubricate the upper part recirculating ball screw of the with the help of a brush
5. lubricate the two linear guidings

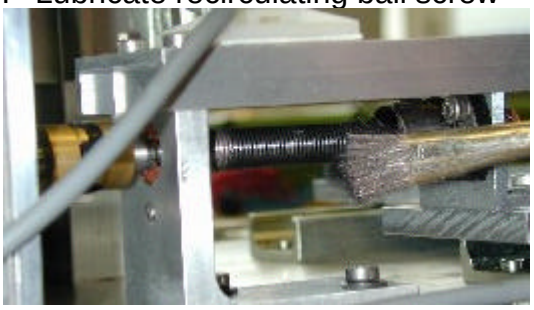
carriage

6. Lubricate the 2 linear guidings





7. Lubricate recirculating ball screw



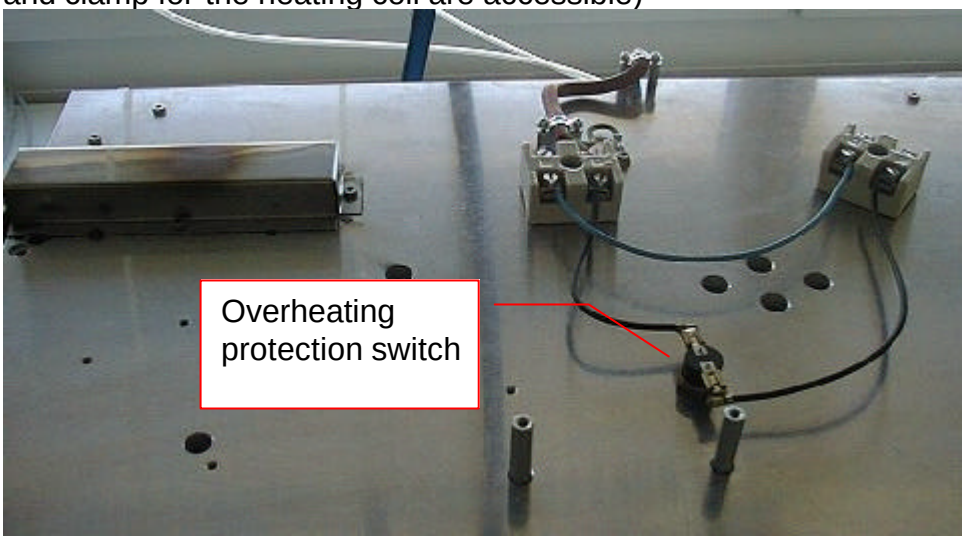
7 Heating

7.1 Diagnosis

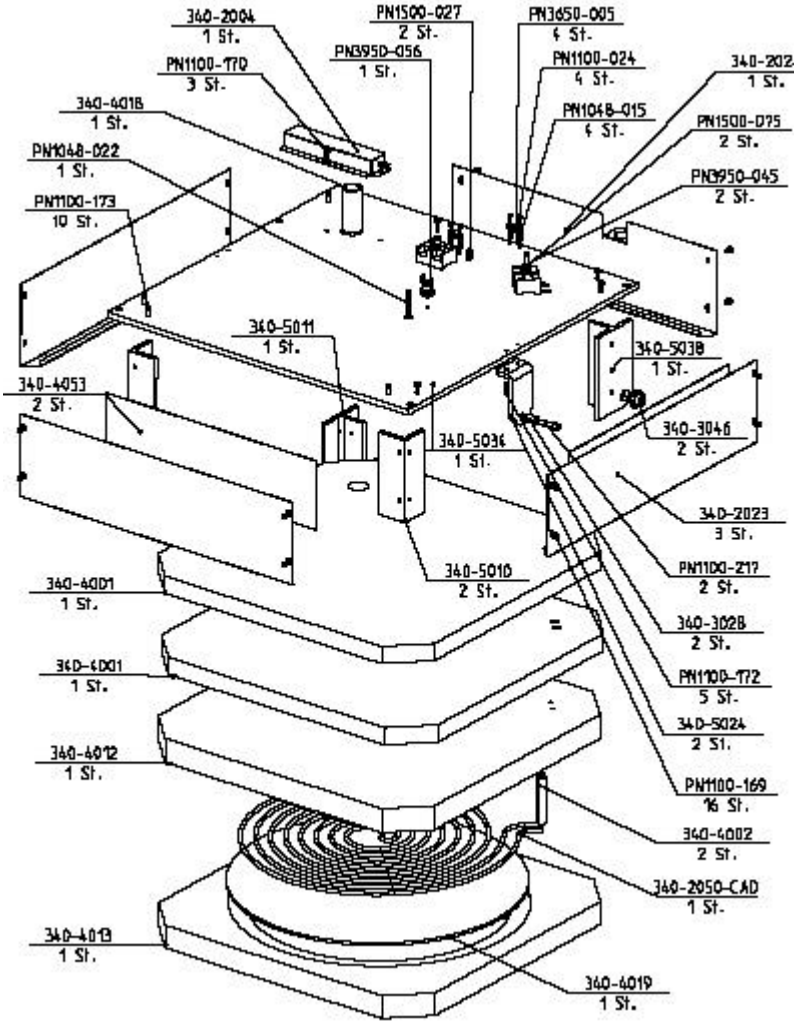
1. check the lower pneumatic switch (prepASH is only heating with the hood closed)
   i. remove the left side wall
   ii. the hood closed the lower pneumatic switch must shine
   iii. check the position (48 mm hinge/lower border)
   iv. exchange switch
2. check the heating
   i. Resistance at power board
      unplug the plug 76/77/78
      measure resistance between 76/78 (16.5 Ω)
   ii. Measure resistance at the clamp of the heating coil
      (for this the upper cover has to be removed)
      check the overheating protection switch
      exchange the heating coil

7.2 Remove upper cover (overheating protection switch PN 3950-056)

1. open and fix the hood with the hood locking device
2. remove sample plate and weighing pan and fix the red balance protection plug.
3. **Important:** disconnect the prepASH from the mains
   (Pull out mains plug)
4. open the middle back
5. take out the plug of the crush protection on the power board (Pos7/8)
   unscrew the cables from the plug and remove cable ties
6. unscrew the 4 screws in the corners of the cover from below
7. remove the hood locking device and close the hood manually
8. lift the upper cover and push it to the front (caution cable isolation)
9. pull up the crush protection cables
10. remove the upper cover completely (overheating protection switch and clamp for the heating coil are accessible)

11. 

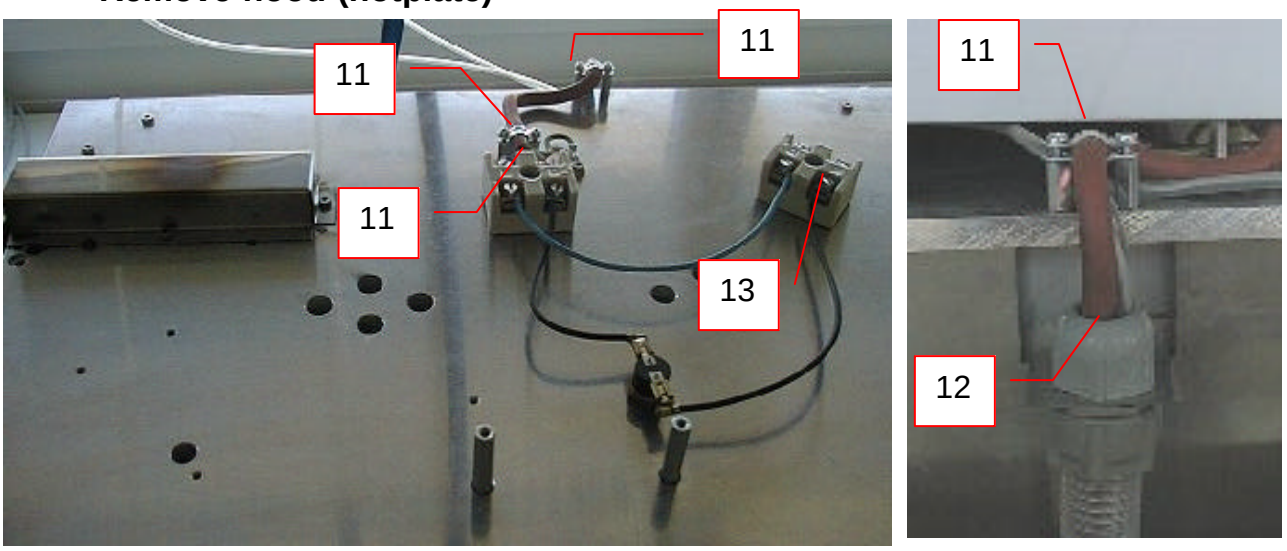
7.3 Change heating coil (340-8007)



Remove upper cover

1. open and fix the hood with the hood locking device
2. remove sample plate and weighing pan and fix the red balance protection plug.
3. **Important:** disconnect the prepASH from the mains (Pull out mains plug)
4. open prepASH (side walls and front panel)
5. open the middle back
6. take out the plug of the crush protection on the power board (Pos7/8)
   unscrew the cables from the plug and remove cable ties
7. unscrew the 4 screws in the corners of the cover from below
8. remove the hood locking device and close the hood manually
9. lift the upper cover and push it to the front (caution cable isolation)
10. pull up the crush protection cables
11. remove the upper cover completely

Remove hood (hotplate)



12. remove the red cable from the hotplate (ground, 2 cables and 2 clamp)
13. Remove hose fitting with red connecting cable trough the clip
14. unscrew the ends of the heating coil and bend them to the top (pliers)
15. remove 2 screws from the top of the pneumatic cylinder (PN1100-217)
16. remove 2 screws from the hotplate hinges (PN 340-3046r
17. lift the hotplate carefully (2 person needed/don't damage the isolation)
18. turn the hood upside down and lay it down with the quartz plate on top

Uncover isolation/heating coil

19. remove the 4 faceplates (340-2023/340-2024)
20. remove the heating isolation (340-4013) and the quartz disk (340-4019)
21. remove the heating coil (don't damage the isolation by pulling out the lose ends!)

Install isolation/heating coil

22. Insert the heating coil (340-22050) into the spiral of the isolation (the heating coil is delivered stretched/buckled, outer spiral = longer part)
23. insert the lose ends of the heating coil carefully into the upper isolation
24. install quartz disk (340-4019) and heating isolation (340-4013)
25. install the 4 faceplates (340-2023/340-2024)

Assemble hood (hotplate)

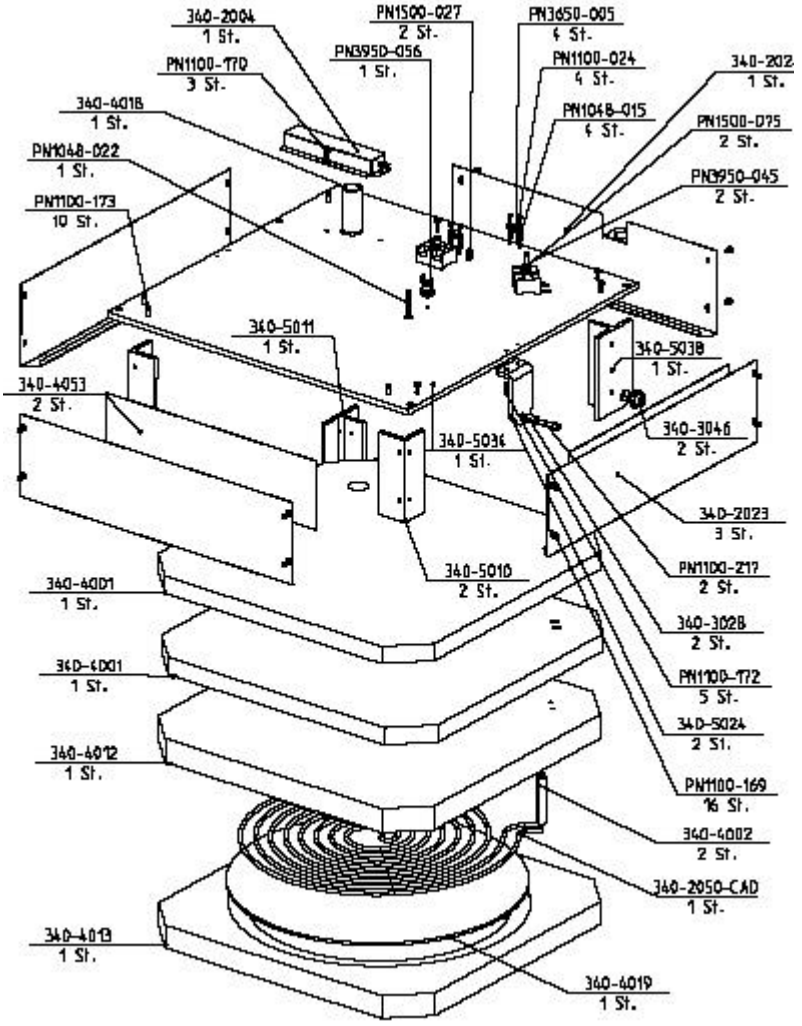
26. turn the hood and fix it to the hotplate hinges (PN 340-3046)
27. fix the pneumatic cylinder win (PN1100-217)
28. bend the lose ends of the heating coil and screw them on the clamp
29. fix hose fitting with red connecting cable trough the clip
30. screw the red connecting cable on the clamp on the hotplate (ground, 2 cables and 2 clamp

Assemble upper cover and crush protection

31. put the upper cover on the hotplate (displaced slightly to the front, **caution: cable isolation**)
32. pull the crush protection cables through the tubular cable protection (e.g. with aid of a wire from below)
33. put the upper cover to the correct position
34. plug in the mains cable and turn on the instrument
35. Open (by software) and fix the hood
36. turn off prepASH and disconnect from the mains
37. fix the upper cover with 4 screws in the corners from below
38. screw the cables of the crush protection on the plug, and plug it in to the power board (Pos 7/8)
39. put the cable ties
40. close the back board
41. remove the balance protection plug and slide in the weighing pan
42. remove the hood locking device
43. plug in the mains cable and turn on the instrument
44. check the crush protection
45. close the side walls

8 Exchange isolations/quartz disk

8.1 Upper isolation (340-4013, drawing 340-8007)



Remove upper cover

1. open and fix the hood with the hood locking device
2. remove sample plate and weighing pan and fix the red balance protection plug.
3. **Important:** disconnect the prepASH from the mains (Pull out mains plug)
4. open prepASH (side walls and front panel)
5. open the middle back
6. take out the plug of the crush protection on the power board (Pos7/8)
   unscrew the cables from the plug and remove cable ties
7. unscrew the 4 screws in the corners of the cover from below
8. remove the hood locking device and close the hood manually
9. lift the upper cover and push it to the front (caution cable isolation)
10. pull up the crush protection cables
11. remove the upper cover completely

Remove hood (hotplate)

12. remove the red cable from the hotplate (ground, 2 cables and 2 clamp)
13. Remove hose fitting with red connecting cable trough the clip
14. remove 2 screws from the top of the pneumatic cylinder (PN1100-217)
15. remove 2 screws from the hotplate hinges (PN 340-3046)
16. lift the hotplate carefully (2 person needed/don't damage the isolation)
17. turn the hood upside down and lay it down with the quartz plate on top

Isolation

1. remove the 4 faceplates (340-2023/340-2024)
2. remove the heating isolation (340-4013) (and the quartz disk (340-4019))

Assemble the isolation/quartz disk

3. install quartz disk (340-4019) and heating isolation (340-4013)
4. install the 4 faceplates (340-2023/340-2024)

Assemble hood (hotplate)

5. turn the hood and fix it to the hotplate hinges (PN 340-3046)
6. fix the pneumatic cylinder win (PN1100-217)
7. fix hose fitting with red connecting cable trough the clip
8. screw the red connecting cable on the clamp on the hotplate (ground, 2 cables and 2 clamp

Assemble upper cover and crush protection

9. put the upper cover on the hotplate (displaced slightly to the front, **caution: cable isolation**)
10. pull the crush protection cables through the tubular cable protection (e.g. with aid of a wire from below)
11. put the upper cover to the correct position
12. plug in the mains cable and turn on the instrument
13. Open (by software) and fix the hood
14. turn off prepASH and disconnect from the mains
15. fix the upper cover with 4 screws in the corners from below
16. screw the cables of the crush protection on the plug, and plug it in to the power board (Pos 7/8)
17. put the cable ties
18. close the back board
19. remove the balance protection plug and slide in the weighing pan
20. remove the hood locking device
21. plug in the mains cable and turn on the instrument
22. check the crush protection
23. close the side walls

8.2 Exchange lower isolation

The cover has to be removed to change the lower isolation.

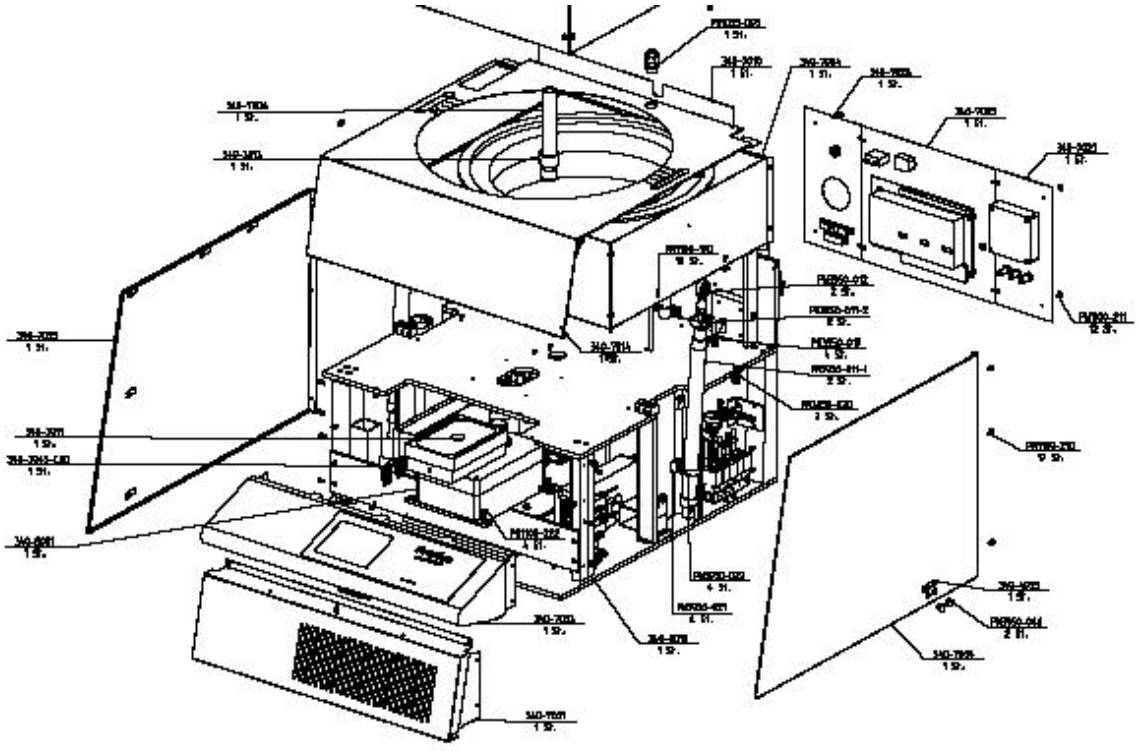
remove upper cover

18. open and fix the hood with the hood locking device
19. remove sample plate and weighing pan and fix the red balance protection plug.
20. **Important:** disconnect the prepASH from the mains (Pull out mains plug)
21. open prepASH (side walls and front panel)
22. open the middle back
23. take out the plug of the crush protection on the power board (Pos7/8) unscrew the cables from the plug and remove cable ties
24. unscrew the 4 screws in the corners of the cover from below
25. remove the hood locking device and close the hood manually
26. lift the upper cover and push it to the front (caution cable isolation)
27. pull up the crush protection cables
28. remove the upper cover completely

Remove hood (hotplate)

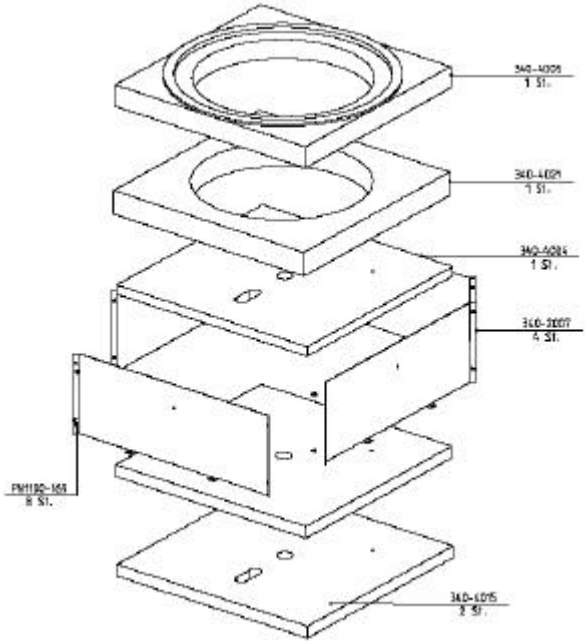
29. remove the red cable from the hotplate (ground, 2 cables and 2 clamp)
30. Remove hose fitting with red connecting cable trough the clip
31. remove 2 screws from the top of the pneumatic cylinder (PN1100-217)
32. remove 2 screws from the hotplate hinges (PN 340-3046)
33. lift the hotplate carefully (2 person needed/don't damage the isolation)
34. turn the hood upside down and lay it down with the quartz plate on top

Uncover and remove the lower isolations (340-6400)

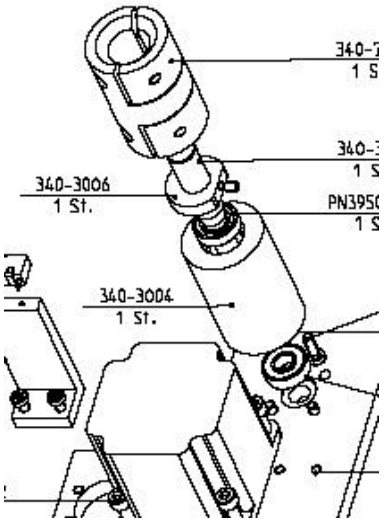


35. remove golf-ball from pneumatic cylinder (PN3950-012)
36. remove the decorative metal (340-7014) by opening the 4 screws

37. **remove the lance** (fragile, handle with care -> 10 “Exchange the lance” p. 22)
38. remove front sheet metal



39. Lateral metals
    a. if only the lateral isolations have to be replaced, it is sufficient to remove the metals from the base plate
    b. if the isolation at the bottom has to be replaced, the metals have to be removed completely.
    remove the rotation axis (open the 2 screws at the top of the axis coupling and remove the axis from the top)



40. remove isolations (bottom isolation: caution to the stack and the temperature sensor)

Assemble the isolations

41. insert the isolations (bottom isolation: caution to the stack and the temperature sensor)
42. fix the sheet metal (PN1100-169)
43. if necessary install the axis of rotation (carefully align the axis when tightening the screws)
44. install the lance

45. put up the decorative metal and fix it with the 4 screws.
46. screw on the golf-ball to the pneumatic cylinder

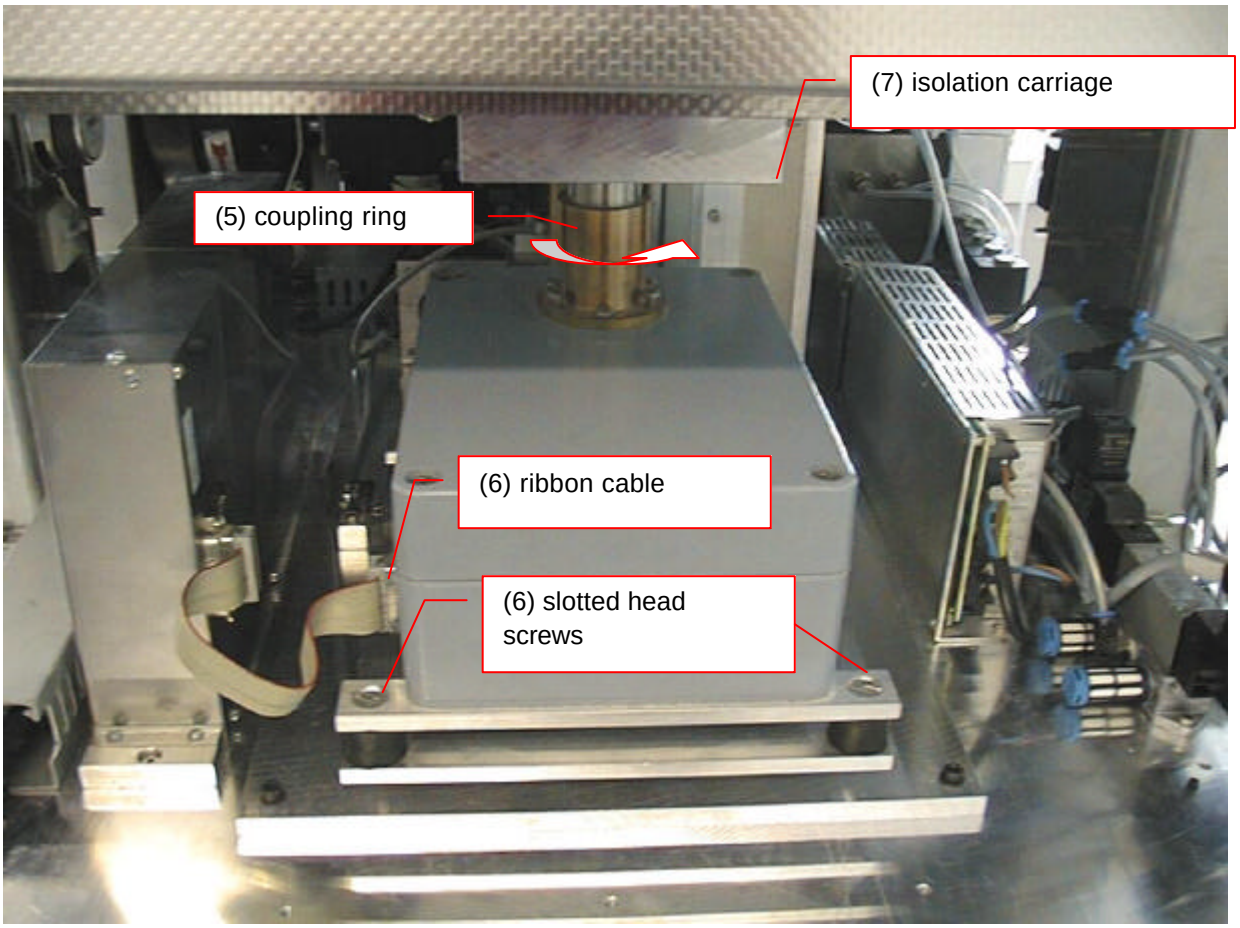
Assemble the hood (hotplate)

47. turn the hood and fix it to the hotplate hinges (PN 340-3046)
48. screw on the pneumatic cylinders (PN1100-217)
49. fix hose fitting with red connecting cable trough the clip
50. screw the red connecting cable on the clamp on the hotplate (ground, 2 cables and 2 clamp

Assemble upper cover and crush protection

51. put the upper cover on the hotplate (displaced slightly to the front, **caution: cable isolation**)
52. pull the crush protection cables through the tubular cable protection (e.g. with aid of a wire from below)
53. put the upper cover to the correct position
54. plug in the mains cable and turn on the instrument
55. Open (by software) and fix the hood
56. turn off prepASH and disconnect from the mains
57. fix the upper cover with 4 screws in the corners from below
58. screw the cables of the crush protection on the plug, and plug it in to the power board (Pos 7/8)
59. put the cable ties
60. close the back board
61. remove the balance protection plug and slide in the weighing pan
62. remove the hood locking device
63. plug in the mains cable and turn on the instrument
64. check the crush protection
65. close the side walls
66. mechanical calibration (->19 “Mechanical Calibration” p.29)
    in case the rotation axis has been removed, the offsets have to be redetermined

9 Exchange the stack



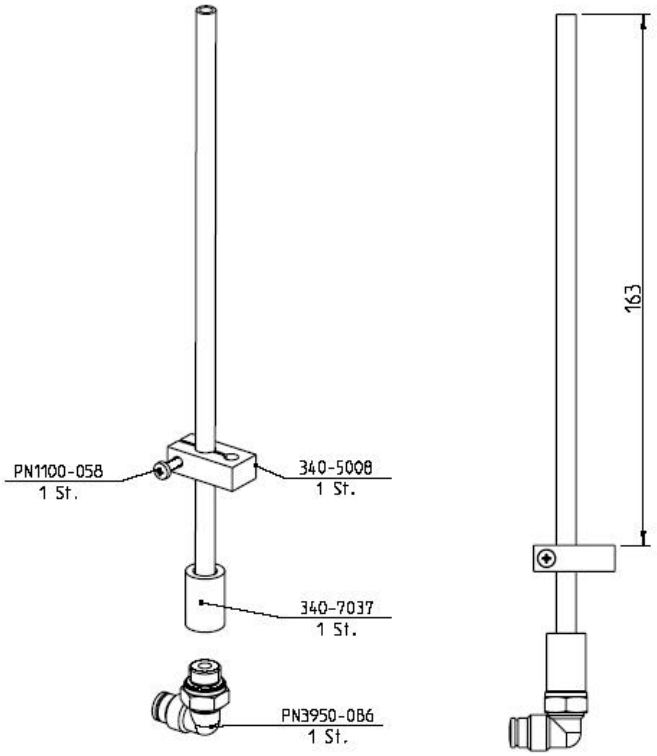
Disassembling

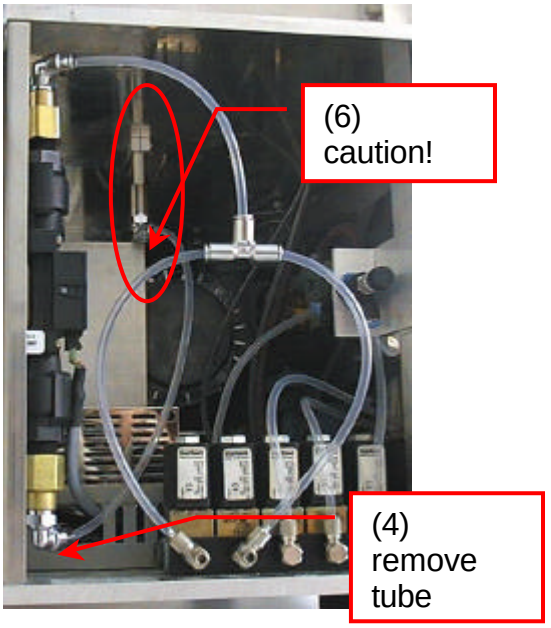
1. open and fix the hood with the hood locking device
2. **Important:** disconnect the prepASH from the mains (Pull out mains plug)
3. open prepASH (side walls and front panel)
4. remove sample plate and weighing pan and fix the red balance protection plug
5. loosen coupling ring of the stack
6. disconnect the ribbon cable from the balance and remove the 4 slotted head screws of the balance mounting part
7. push the isolation carriage to the back (lift the stack)
8. lift the balance slightly and remove it to the front (caution to the stack)
9. remove the stack to the bottom

Installation

10. insert stack (balance ready to hand)
11. install the balance (lift stack), tighten the 4 screws)
12. tighten the coupling ring
13. plug in the ribbon cable
14. slide in the weighing pan (remove the red protection plug)
15. if necessary align the stack with set screws.

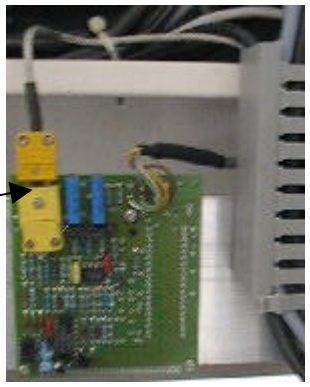
10 Exchange the lance





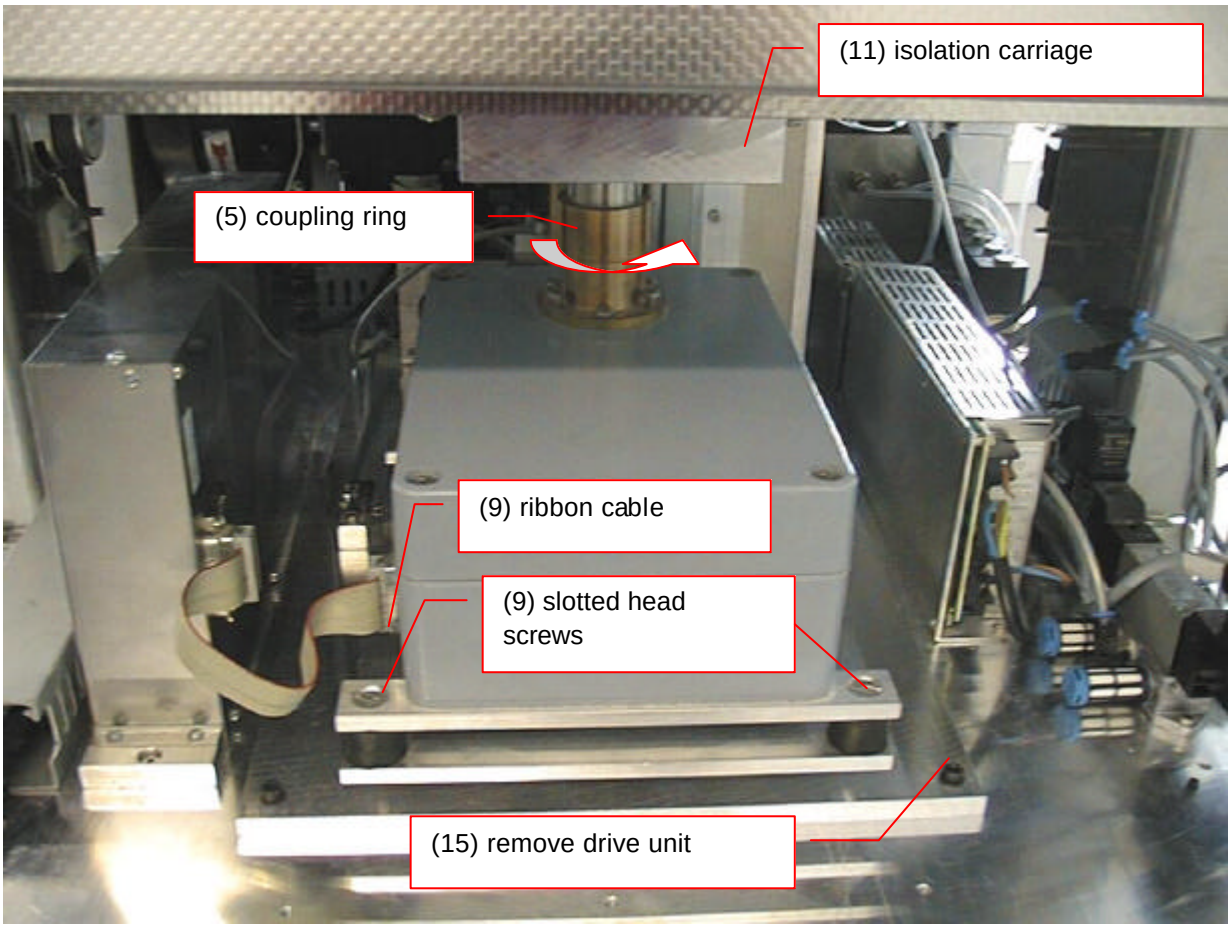
1. **Important:** disconnect the prepASH from the mains (Pull out mains plug)
2. open the middle back
3. open the right side wall
4. remove the tube from the l**ower** connection
5. unscrew the lance from the hotplate
6. pull the lance carefully to the bottom (turn it not to crash with the drive unit)
7. unscrew the lance fastener (340-5008) and the connection (PN 3950-086)
8. fix both to the new lance (340-7038)
9. insert the lance carefully into the hotplate and fix it.
10. connect the tube.

11 Replace the thermometer



1. **Important:** disconnect the prepASH from the mains
2. open prepASH (side walls and front panel)
3. unplug the thermometer (temperature board/front panel).
4. open cable duct
   cut the cable tie required and disentangle the cables
5. remover the thermometer by turning
6. insert new thermometer
7. lay the cable into the cable duct and fix it with cable ties
8. plug in at the temperature board

12 Exchange the drive unit



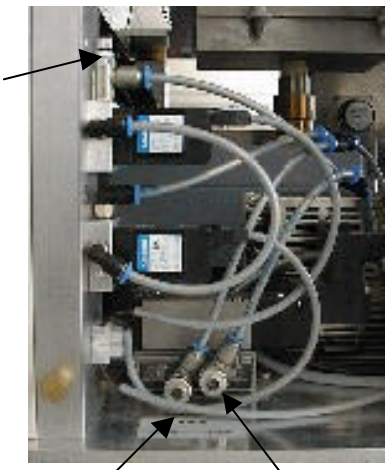
Disassembling

1. open and fix the hood with the hood locking device
2. **Important:** disconnect the prepASH from the mains (Pull out mains plug)
3. open prepASH (side walls, front panel and middle back)
4. remove sample plate and weighing pan and fix the red balance protection plug
5. remove carefully the lance
6. unplug on the power board: 3 stepping motors (M1, M2, M3: 45-56) and position switch(1-6)
7. open cable duct and disentangle the cables
8. disconnect the ribbon cable from the balance and remove the 4 slotted head screws of the balance mounting part
9. push the isolation carriage to the back (lift the stack)
10. lift the balance slightly and remove it to the front (caution to the stack)
11. remove the stack to the bottom
12. remove the isolation carriage to the front
13. remove the axis of rotation (open the2 screws at the top of the axis coupling and remove the axis from the top)
14. remove the drive unit to the front (4 screws)

Installation

15. **Important:** disconnect the prepASH from the mains (Pull out mains plug)
16. insert the drive unit from the front, tighten the 4 screws only slightly (-> later positioning)
17. insert axis of rotation and tighten the 2 upper screws on the axis coupling)
18. align the drive unit, fine positioning with set screws (all set screws must be in contact to the plate!), tighten the 4 slotted head screws
19. insert isolation carriage (orientation: the “V” must be visible from the front)
20. Insert stack (balance ready to hand)
21. Install the balance (lift stack), tighten the 4 screws)
22. tighten the coupling ring
23. plug in the ribbon cable
24. slide in the weighing pan (remove the red protection plug)
25. if necessary align the stack with set screws.
26. install lance
27. plug in on the power board: 3 stepping motors (M1, M2, M3: 45-56) and position switch(1-6), close the cable duct (Caution M2 must be carried over the duct)
28. close the middle back
29. close front panel
30. close side walls
31. mechanical calibration, the offsets have to be redeterminded 19 “Mechanical Calibration” p.29)

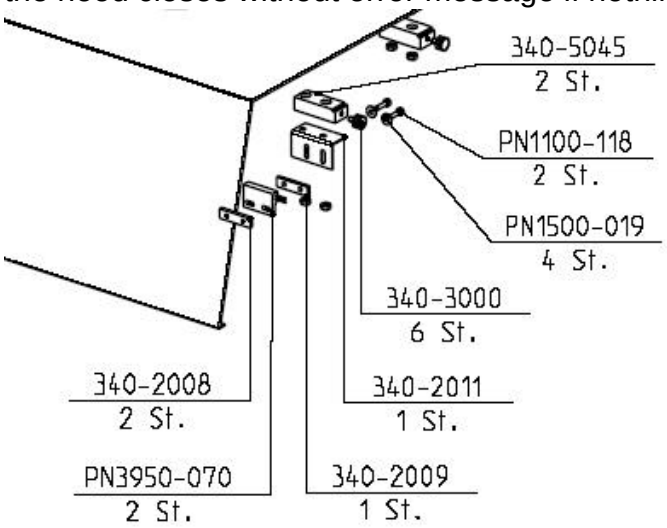
13 adjust pneumatic



1. **Important:** disconnect the prepASH from the mains
2. Check air pressure (6 bar)
3. open right side wall
4. open/close the hood manually
5. adjust throttle valve (on the top (1))
   (this is only working when disconnected from mains)
6. plug in the mains cable and turn on the instrument
7. open hood (Software) and adjust throttle valve (on the front (2))
   (opening time ca. 12 s)
8. close hood (Software) and adjust throttle valve (on the back(3))
   (closing time ca. 12 s)

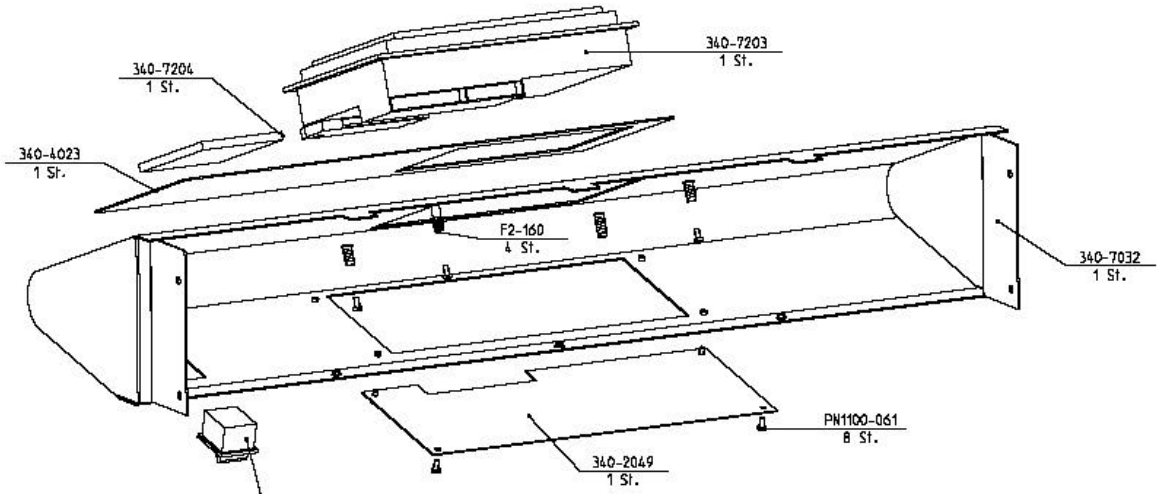
14 Adjust crush protection

1. open side walls (instrument „on“, ⚡)
2. positioning of the magnetic switch in such a way that
   crush protection for fingers is warranted
   the hood closes without error message if nothing is in between

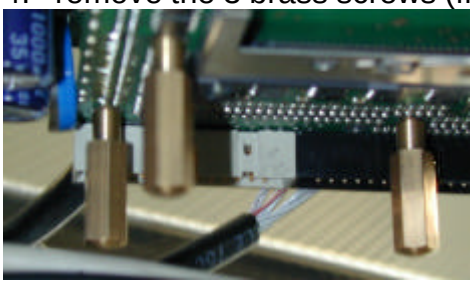


15 Exchange Terminal

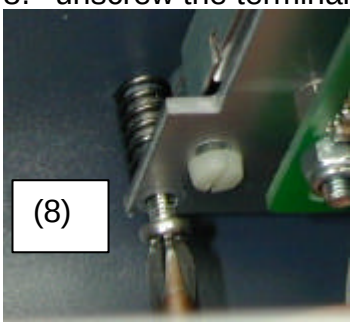
Disassembly

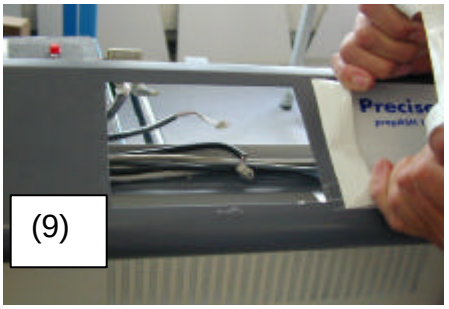


1. **Important:** disconnect the prepASH from the mains (Pull out mains plug)
2. open prepASH (side walls and front panel)
3. screw off the desk cover (340-2049) (from outside front/bottom)
4. remove the 3 brass screws (from inside)



5. unplug the ribbon cables E1 and G1
6. pull the flash card to the bottom
7. unplug cables F1, H1 and 11-14 (power)
8. unscrew the terminal (4 screws with springs)





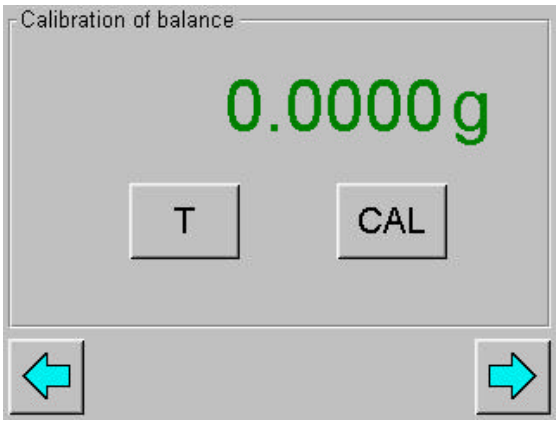
9. detach slowly the front foil (Caution: hold the terminal)
10. remove terminal (don't lose the springs)

Assembly

11. remove lamination sheet from new terminal
12. insert terminal from the back
13. Fix the terminal with 4 screws (springs). Tighten the screws until the touch is even with the desk.
14. plug in F1, H1 and 11-14 (power)
15. insert flash card
16. plug in ribbon cables E1 and G1
17. fix the flash card with 3 brass screws
18. install the desk cover
19. close prepASH and turn it on (-> terminal shines)
20. stick the front foil (at first remove the protection film only at the left hand side. The shining terminal helps to align)

16 Balance Calibration

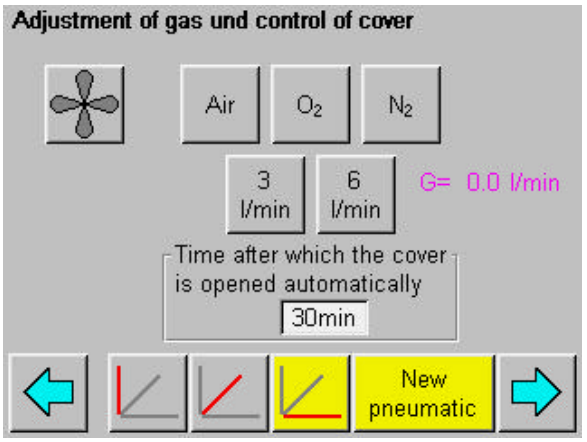
1. go into the service program (password 98180)
2. if the hood is closed, it can be opened using the next side

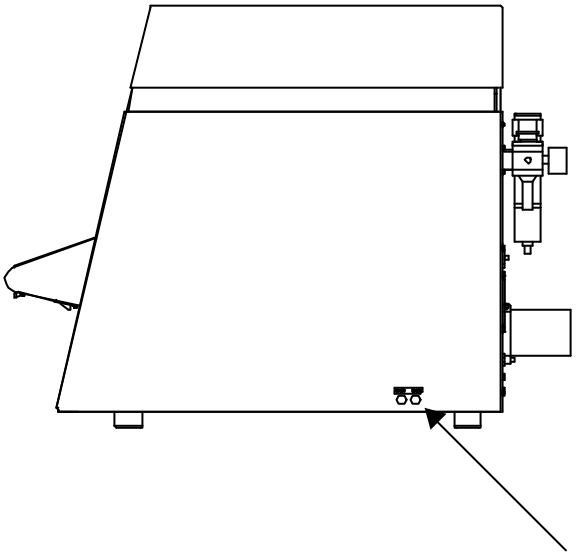


3. tare the balance with „T“.
4. calibrate with „Cal“. (Intelligent Calibration Mode)

17 Gas adjustment and hood control

1. Open the service program (password 98180)
2. With the blue flash to the right until “ Adjustment of gas”

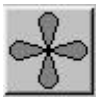




Gas adjustment:

1. Select the process gas (Inlet pressure: Air 6 bar, O2 and N2: 3 bar)
2. open the valve by touching the corresponding switch surface. The effectively measured gas flow is indicated on the right.
3. If necessary, regulate the flow of the valve (Increase flow by turning anti-clockwise)

Testing the Exhaust Fan

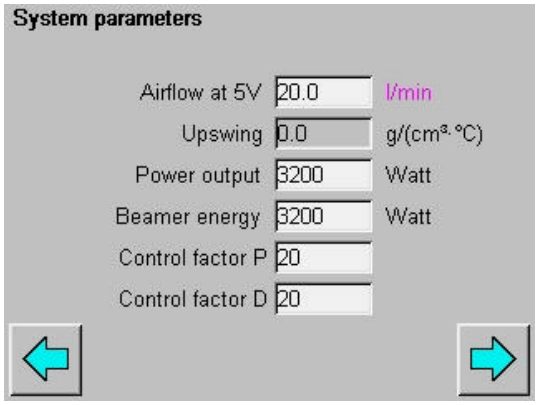


Hood opening time:

The program allows the user to select the temperature at which the hood is half-opened after the analysis. Here the user can program the time interval between half and fully opened hood.

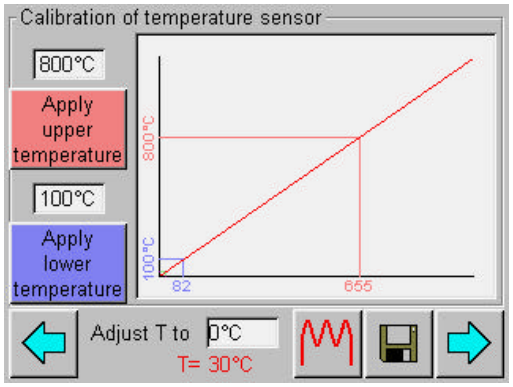
Heating power/control

1. Open service program (Passwort 98180)
2. With the blue flash to the right until " System parameter"
3. The setting must me as shown below:
   (exept Japn 200 V: Power output and Beamer energy: 2425 W)



18 Temperature calibration

1. Open service program (Passwort 98180)
2. With the blue flash to the right until " Temperature calibration"



3. Remove sample plate
4. Insert the reference thermometer from the back (remove the screw)
5. Depth of insertion 155 mm
6. Set the temperature to 100 °C

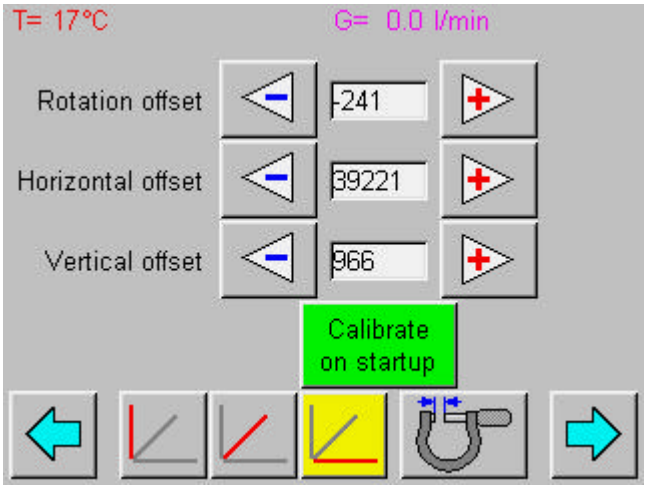
7. Touch on the "coil" icon to start the heating
8. Wait until heated up to 100 ° and temperature is stable
9. Read the temperature from the reference thermometer and typ it in
10. Apply lower temperature

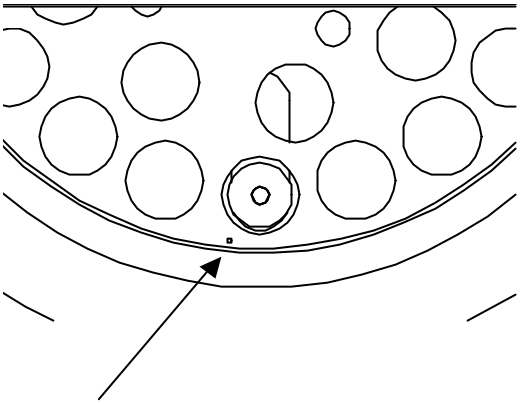
11. Set the temperature to 800 °C

12. Wait until heated up to 800 ° and temperature is stable
13. Read the temperature from the reference thermometer and typ it in
14. Apply upper temperature
15. **Save** with the saving icon **(without saving the new calibration is lost when leving the page and the last calibration is still valid)**

19 Mechanical Calibration

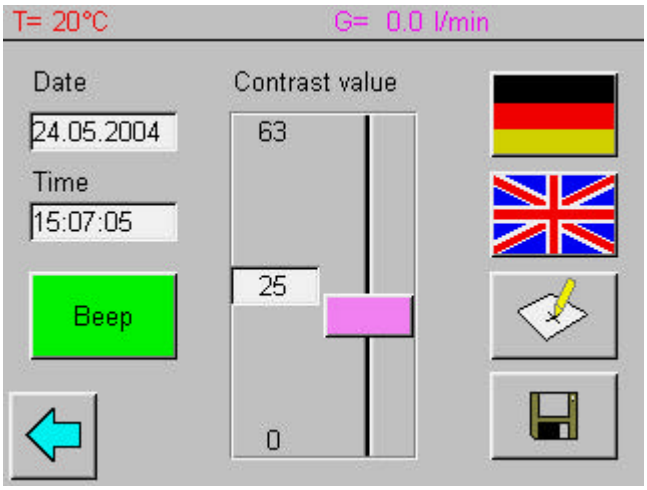
1. **Restart prepASH (off/on)**
2. Open service program (Passwort 98180)
3. With the blue flash to the right until “ mechanical calibration”
4. Carfully place the sample plate on the rotary axis.
   Note: The small hole in the sample plate must lie to the left of the balance pan (refer to figure below)
5. Keep calibrating the horizontal and vertical offset until the valance pan is located concentrically in the hole of the sample plate, viewed from above.
6. set horizontal offset: ssspace between crucible and weighing pan about 3 mm
7. „Calibrate on start up“ must be activated
8. the new settings are stored by leaving the page to the right of the left.





20 Screen settings / Languague selection

1. Open “screen settings”
2. enter password (Service: 98180)



3. **Date / Time**
   The date is entered in the format dd.mm.yyyy; the time in the format hh:mm:ss.
4. **Beep (Buzzer**)
   The accoustic signal can be switched off using the switch surface Buzzer
5. **Contrast**
   The screen contrast is adjusted to the light conditions using the slide switch.
6. **Language**
   Select language by touching appropriate flag.

7. **creen calibration**

8. Calibrate the Touch Screen using .
9. Follow the instructions on the screen.
10. Touch each cross until it fades away. By doing this, you are selecting the center and four corner points of the screen.

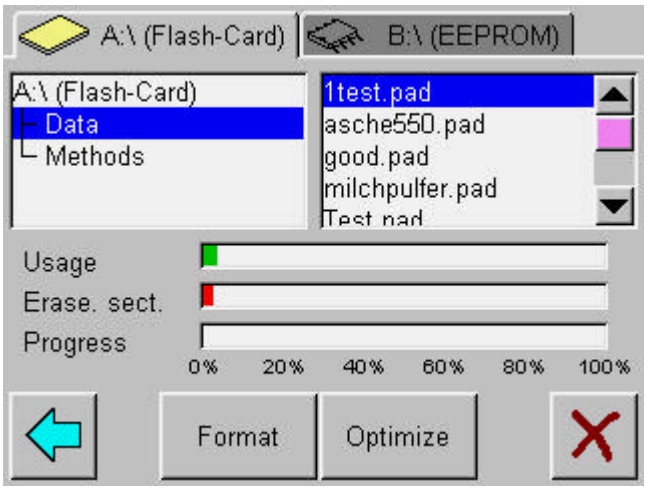
☞	Do not interrupt the calibration before complete

11. **Save**
    Changes in the screen settings must be saved otherwise the previously valid settings will remain active.

21 Formatting

New flash cards have to be formated.

The format page is opened by touching the switch surface of the start page. On this page it is possible to format, optimise or erase the storage mode Eeprom and Flash Card.



Format: To format the storage mode

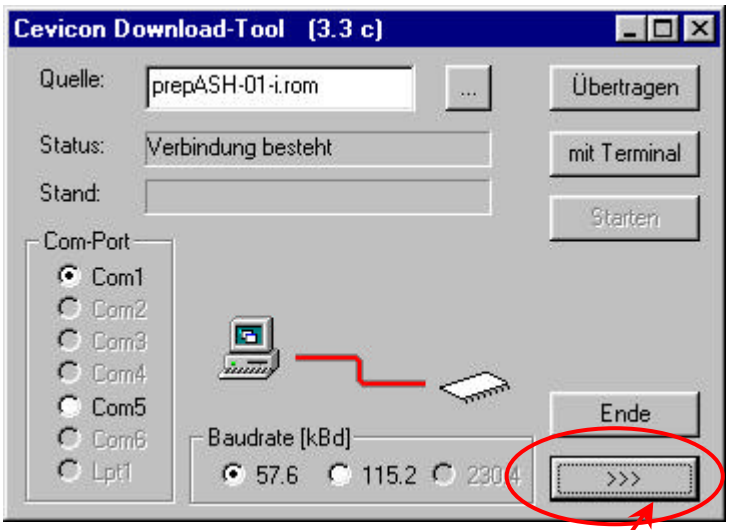
NOTE
After formatting, all data are lost. You are requested to confim.

Optimize: If there is any indication in the area Erasible Sectors, the data can be re-arranged according to available storage space.

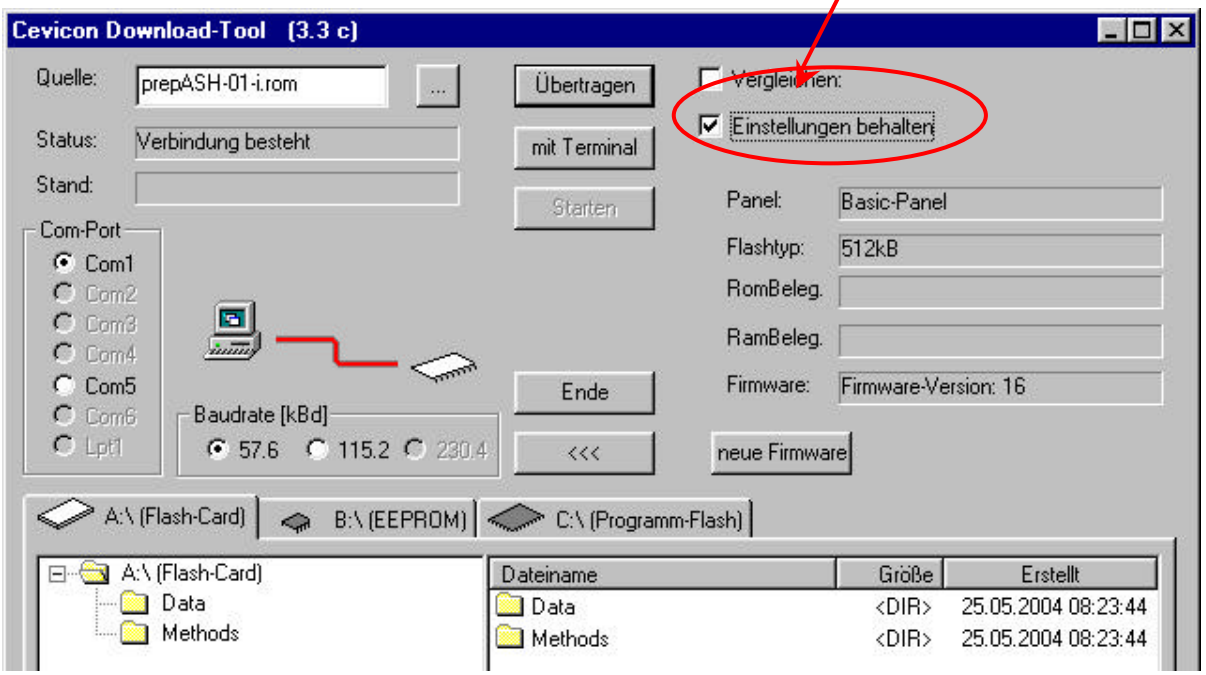
Erases the highlighted data.

22 Software update

1. Connect the PC to the prepASH **(com1)** with a Zero-Modem-Cable (prepASH has to be switched on)
2. start the download-tool “ceLoad.exe” (-> the prepASH screen will turn black as soon as the connection exists “Verbindung besteht”)
3. Quelle(Source): Select the Software-File



4. Enlarge the window with >>>
5. **Choose “Einstellungen beibehalten” (=keep settings) not to loose the settings (offsets, heating parameter, calibrations)**



6. click on “Übertragen” (=transmit)
7. After the software has been uploaded close the tool with “end” and “ja” und disconnect the prepASH
8. prepASH has to be restarted (main switch off/on)